

SC .15 is more than enough power, installation of engine is so easy. Tank and wheels not provided.

## Tissan Haifa's PAR-PAR

**H**aving built and been much impressed with the Tissan Haifa Banana (reviewed recently in our sister title RCM&E), I discovered that the company made other kits, the Condor glider, which will be the subject of another review soon, and the Flamenco and Par-par.

The latter is a biplane of 37" span for .1- to .15 engines or .26 four-strokes and I just had to have one so I obtained a kit direct from Israel. You should be able to get one from Hobby Stores by the time you read this.

The postal service between Israel and this

country had done its best to fold the kit in half and so every spar, leading edge and trailing edge strip was broken but it was still worth the effort because it is a sensational kit!

### Goodies in the box

The box is well presented with a colourful picture of the model and a smaller one of the Flamenco; it seems that the fuselage is identical, you just need a different wing kit to do a conversion. This seems to be standard practice with Tissan Haifa because the wings of the Butterfly are the same as the Banana

| Tec specs       |  |
|-----------------|--|
| Name:           | Par-Par                                  |
| Aircraft type:  | Aerobatic biplane                        |
| Manufacturer:   | Tissan Haifa (Israel)                    |
| Available from: | Hobby Stores                             |
| Wingspan:       | 38"                                      |
| Wing area:      | 480 sq. in.                              |
| Length:         | 33"                                      |
| Tail span:      | 16-                                      |
| Area:           | 66 sq. in.                               |
| Weight:         | 40 ounces                                |
| Power:          | .10 to .15 or .26 four stroke            |
| Channels:       | 4 channel Std radio with one micro servo |

### Peter Miller builds and tests a remarkable biplane kit from Israel

aileron wings with minor variations.

The kit is very complete, if not quite as complete as the Banana. You will need to provide a fuel tank, 4 ounce slant front Sullivan is shown, wheels, wing seating tape and some of those metal connectors that fit to the servo arm and have a screw to clamp the snake or rod.

Snakes are provided including a metal snake with the metal clevis soldered on for you. Undercarriage is a dural unit and there is also a tailwheel unit ready bent up. The wood parts are all pre-cut and pre-shaped and the top decking is even pre chamfered. The wing centre section sheet is all pre-cut and everything fits. You do not need to touch a modelling knife with these kits.

The instructions are printed in Hebrew but there is a very good English translation, although one or two words need changing, e.g., "fuselage closure" refers to the tail post and at one stage you are told to glue the elevators to the fuselage when they mean the tailplane!

The plans are superb, everything is shown in detail and very clearly, it should be impossible to make a mistake with the construction.



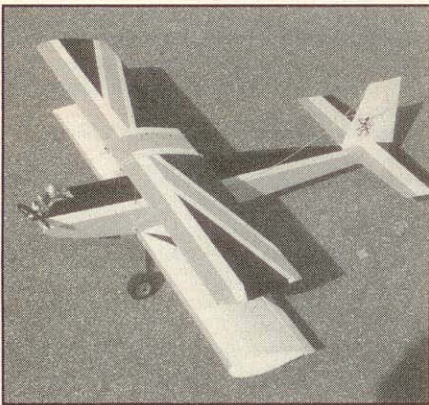
Model is very easy to take off and land. Cabane struts are ultra easy to get right, makes a change from most biplanes.

## Get building

Oh what Joy! What bliss! What ecstasy! The only trouble is that, like all good things, it doesn't last long enough. You will notice that there is not the obligatory photo of the contents of the kit and here is the reason. I decided to glue the broken spars, etc., together before taking the pictures. I found that I had some stock the same size as the spars so I checked it for fit on the ribs. Then I looked out of the window and it was raining so I laid the wing plan on the board and covered it with clear plastic and fifteen minutes later I had a complete wing built!

It was still raining and so another fifteen minutes passed, the cyano bottle was a little lower and I had two wings. Well, it wasn't worth taking pictures of **half** the kit contents so I started on the fuselage, a bit over an hour later and it was ready for covering.

The initial fuselage construction is slightly unusual but it works well. You glue the bottom rear sheet to the right side, Former 4 and the tail post on, the other side and the remaining rear formers after which you work forwards. The short formers at each end of the cockpit are fully pre-chamfered at the correct angles, the top deck sheeting is pre-chamfered and all of a sudden you have a fuselage.

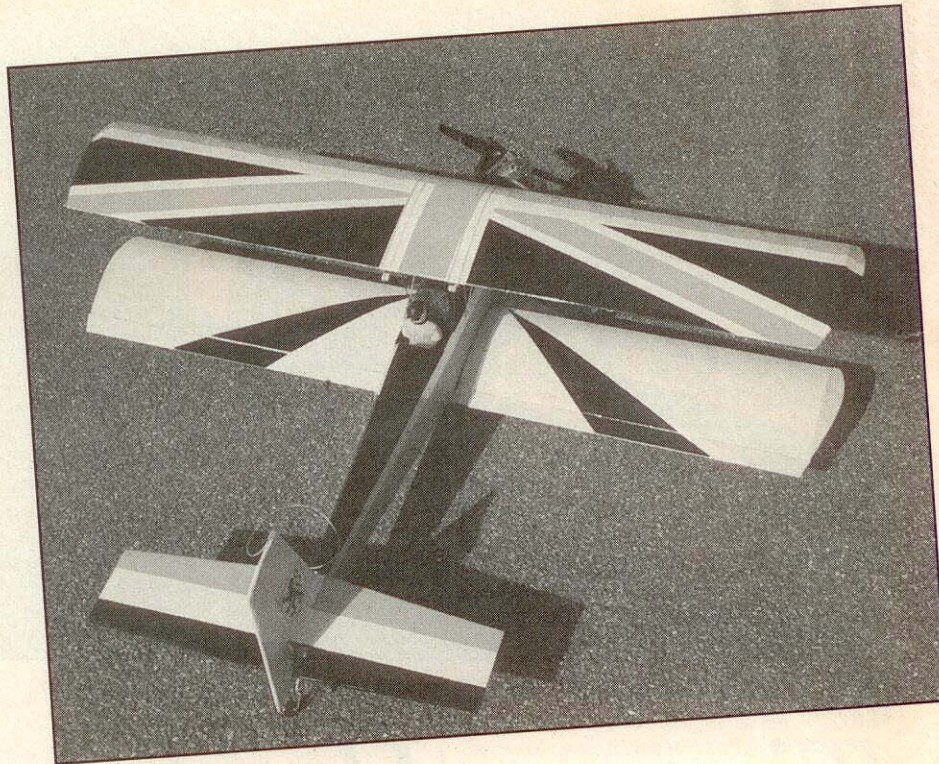


*Patriotic colour scheme make's a nice variation on usual sunray designs. Solarfilm and Solartrim.*

Servo rails are all pre-cut to length, there are four rails in the fuselage and they are all different. If it doesn't fit, it is the wrong one. The strut mounts really amazed me, I thought that they were bits of aluminium tube but I found that they were two pieces of rod drilled to take the strut ends. Fantastic. The struts are four rods threaded at the top and bent over at the bottom. At the top you fit a nut, a washer, insert into the hardwood rails and add another nut. Fit the bottoms into the fuselage mounts and tighten the nuts making sure that the top rails are parallel. I found that the nuts stripped their threads too easily and ended up soldering them.

The struts are diagonally braced with hardwood strips, pre-cut and slotted, naturally. These are bound and glued to the uprights. The idea is to save the builder having to do any soldering. I don't really trust gluing to metal although I am sure that this arrangement is quite safe but I bent up some scrap clevis rod ends and soldered them in as diagonals. The pre-shaping of all parts extends down to two tiny triangular pieces of wood to fair the top rear sheet to the sides and two small pre-shaped pieces which form the forward stops on the top wing rails.

All hinge slots are pre-cut in all the controls and surfaces, even the bottom of the rudder is



*Model is extremely attractive even though most lines are straight.*

grooved for the tailwheel steering arm.. I could go on raving about the construction but instead I will sum it up with one word, PERFECTION!

## Covering

I covered the model with Solarfilm and added Solartrim decoration. Because the model took so little time to build I spent longer than normal on the colour scheme. Solarfilm have an excellent video on covering and trimming a model and it is well worth while buying a copy.

## Installation

The Par-par will take standard radio but a micro servo is used for the aileron. I chose to use one of my Fleet micro airborne packs with a standard 600 mAh battery, mainly because it is lighter and gives me a little more room to play with. Everything fits with ease. The instructions tell you to fit the battery at the rear with the heavier engines and under the tank with the lighter ones.

I used a Super Custom .15, one of the new ones which is the same size as their .12 and so I fitted the battery in the front. The plans show a tank hatch dotted but this is not necessary as it is quite easy to fit the tank through the wing cut-out.

The CG came out smack on the dot. Oh I do love this kit. Control throws are not given, you just use the suggested holes in the horns and output arms. I feel that this is a mistake as output arms vary and servo throws can be changed at the transmitter.

## Flying

During a spell of breezy and showery weather, a Wednesday evening turned out fine. I expected one or two other club members to go flying but when I arrived at the field I was alone. After all the obligatory checks and a couple of photos 'just in case' I fired up the engine, aimed the model into wind and opened the throttle. She departed at high speed in a dead straight line, a touch of up and she climbed away, one of the best take

offs that I have done for a long time.

The .15 is more than enough power, the model will climb vertically with ease, slowing gradually and under full control. The elevators are very powerful, so is the rudder but the ailerons are surprisingly sluggish. I dialled in full aileron travel and this produced reasonably fast rolls. I should mention that I like very powerful ailerons - some members of the club have found some of my models too hot to handle in this department so these are probably about right for normal people.

On this first session I flew loops, rolls, Cuban eights, inverted, knife edge and side slips. I also flew flick rolls and vertical rolls. I made several landings and take offs due to a slight problem with fuel foaming and I found that every take off was on rails while the glide was outstanding for a biplane - a whisper of power and she just floated on and on and even dead stick landings ended up at the far end of the strip.

A second flying session confirmed my initial impressions, the model is a pleasure to fly. I was able to fly square loops and the most beautiful stall turns. Inverted only needs a touch of down trim but outside loops are almost impossible due to the thick, flat bottomed wing. I can live with that.

Spins are nice and positive with instant recovery but you need to be sure of orientation on pull outs. Positive and negative spins are about the same, aileron is needed or the spin is 'slow and erratic. I did have one fright. During some aerobatics I saw the wings try to touch at one tip, panic! Had the struts failed? Had the bands snapped? An emergency landing showed that I just had not got the bands tight enough, some shorter bands and a couple extra for luck cured that problem.

## To sum up

Here is a kit which is as near perfection as you are ever likely to find. This applies to the design, accuracy, attention to detail and to the flying. I expect nothing less from Tissan Haifa kits.